



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**REGION 6**  
1201 ELM STREET, SUITE 500  
DALLAS, TEXAS 75270

June 21, 2022

Sent by email only

Gulf Coast Sequestration (GCS)  
2417 Shell Beach Drive  
Lake Charles, Louisiana 70601

**RE: Underground Injection Control (UIC) Permit Application R06-LA-0002**  
**Class VI Pre-Construction Permit Application**  
**Technical Review of Application**

Dear Benjamin Heard:

Upon completing the initial phase of the technical review for the UIC Class VI permit application submitted by Gulf Coast Sequestration for Project Minerva in Lake Charles, Calcasieu Parish, Louisiana, EPA Region 6 has determined that the application does not meet the requirements in 40 CFR §146 Subpart H.

The review team determined that insufficient data was used within section [1. Project Info], which is meant to define the geologic structure and hydrogeologic properties of the proposed storage site and overlying formations as required by 40 CFR §146.83, as well as section [2. AoR CA] surrounding the geologic sequestration project where USDWs may be endangered by historical injection activity 40 CFR §146.84. A complete scope of all artificial penetrations (APs) within the Area of review (AoR) is required to satisfy all modeling and corrective action strategies.

Site data should be based on primary sources, such as geologic cores, outcrop data, seismic surveys, well logs, and lithologic descriptions. This data should define properties, including the depth, areal extent, thickness, mineralogy, porosity, permeability, and capillary pressure of the injection and confining zone(s). The limited core data from APs approximately seven miles northeast of the proposed sequestration site and on the opposite side of the Vinton Dome, which is outside the AoR, though valuable, does not allow for sufficient extrapolation of injection zone heterogeneity. Modeling based on an assumption of homogeneity may not accurately describe the disposal site characteristics and potential AoR. Additionally, EPA recognizes that APs that do not penetrate the proposed confining zone are likely not to pose a danger to USDWs; however, the review team requires documentation that proves that all APs within the AoR were accounted for and identified.

The attachment accompanying this letter details the clarifications and modifications of GCS's permit application that Region 6 requires as we continue our technical review. After discussions internally, it was determined that these issues could be addressed through clarifications via additional primary sources, research, and/or the drilling of one or more stratigraphic test wells closer to the site with appropriate logging, coring, and hydrologic data collection.

If you have any questions, do not hesitate to contact Ian Ussery at (214) 665-6639.

Sincerely,

Ken Johnson, PE  
Ground Water / UIC Section Chief